



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>7</sup> : C12N 15/12, C07K 14/47, C12N 15/63, A61K 38/17</p>	A3	<p>(11) International Publication Number: WO 00/17358</p> <p>(43) International Publication Date: 30 March 2000 (30.03.00)</p>																																																																					
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<p>(57) Abstract</p> <p>The invention provides human chaperone proteins (HCHP) and polynucleotides which identify and encode HCHP. The invention also provides expression vectors, host cells, antibodies, agonists, and antagonists. The invention also provides methods for diagnosing, treating, or preventing disorders associated with expression of HCHP.</p>																																																																							

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C12N15/63 A61K38/17

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JUN WADA ET AL.: "Characterization of mammalian translocase of inner mitochondrial membrane (Tim44) isolated from diabetic newborn mouse kidney" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, vol. 95, no. 1, 6 January 1998 (1998-01-06), pages 144-149, XP002128903 WASHINGTON US abstract page 146, left-hand column, paragraph 3 -right-hand column, paragraph 1; figure 2 page 149, left-hand column, paragraph 2 - paragraph 4	1-8, 12-16,19
X	-& Emrod Database Entry U69898 Accession number U69898; 12 September 1997 XP002128913 the whole document -/--	9-11

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search

27 January 2000

Date of mailing of the international search report

16. 05. 2000

Name and mailing address of the ISA

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Authorized officer

MONTERO LOPEZ B.

## INTERNATIONAL SEARCH REPORT

Internat. Application No.

PCT/US 99/22027

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>NAOTADA ISHIHARA ET AL.: "Identification of the protein import components of the rat mitochondrial inner membrane rTIM17, rTIM23, and rTIM44" THE JOURNAL OF BIOCHEMISTRY, vol. 123, no. 4, April 1998 (1998-04), pages 722-732, XP002071314 abstract page 723, right-hand column, paragraph 2 page 723, right-hand column, paragraph 5; figure 1</p>	1-8, 12-16,19
X	<p>-&amp; Emrod Database Entry Ab006452 Accession number AB006452; 21 August 1997 XP002128914 the whole document</p>	9-11
P,X	<p>BAUER M. ET AL.: "Genetic and functional characterization of the human mitochondrial inner membrane translocase" JOURNAL OF MOLECULAR BIOLOGY, vol. 289, no. 1, May 1999 (1999-05), pages 69-82, XP000874019 page 70, left-hand column, last paragraph -right-hand column, paragraph 1 page 70, right-hand column, paragraph 3 -page 71, left-hand column, paragraph 1 page 72, left-hand column, paragraph 2 -right-hand column, paragraph 1; figure 4 page 79, left-hand column, paragraph 2 - paragraph 3</p>	1-16,19
X	<p>-&amp; Emhum1 Database Entry Af041254 Accession number AF041254; 27 January 1998 XP002128915 the whole document</p>	9-11
P,X	<p>SABINE HOFMANN ET AL.: "Identification and characterization of the human preprotein translocase of the mitochondrial inner membrane" MOLECULAR BIOLOGY OF THE CELL, vol. 9, November 1998 (1998-11), page 79A XP000870416 abstract</p>	1-16,19
A	<p>US 5 646 249 A (FREDERIC J. KAYE ET AL.) 8 July 1997 (1997-07-08) column 4, line 37 -column 21, line 52; examples</p>	1-16,19

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# INTERNATIONAL SEARCH REPORT

International Publication No

PCT/US 99/22027

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	Swissprot Database Entry Im44_Human Accession number 043615; 15 July 1999 HOFMAN S. ET AL.: "Homo sapiens translocase of the inner mitochondrial membrane (hTim44) cDNA." XP002128904 the whole document	1,2
P,X	--- R61u012 Database Entry Ai798647 Accession number AI798647; 7 July 1999 XP002128905 the whole document -----	9-11

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 99/22027

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claim 19 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the composition.
2. ☒ Claims Nos.: 17, 18, 20  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
  
see additional sheet, subject 1.

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 17, 18, 20

Present claims 17, 18 and 20 relate to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is not to be found, however, for any specific example of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, no search has been carried out for claims 17, 18 and 20.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

## 1. Claims: 1-20 partially

Polypeptide comprising sequence SEQ ID NO:1 and variants thereof; polynucleotide encoding the same and variants thereof; expression vector and host cell comprising the same; use thereof for producing the polypeptide; antibody against the polypeptide; agonist and antagonist of the polypeptide and therapeutic use of the antagonist; pharmaceutical composition comprising the polypeptide.

## 2. Claims: 1-20 partially

Polypeptide comprising sequence SEQ ID NO:2 and variants thereof; polynucleotide encoding the same and variants thereof; expression vector and host cell comprising the same; use thereof for producing the polypeptide; antibody against the polypeptide; agonist and antagonist for the polypeptide and therapeutic use of the antagonist; pharmaceutical composition comprising the polypeptide.

## 3. Claims: 1-20 partially

Polypeptide comprising sequence SEQ ID NO:3 and variants thereof; polynucleotide encoding the same and variants thereof; expression vector and host cell comprising the same; use thereof for producing the polypeptide; antibody against the polypeptide; agonist and antagonist of the polypeptide and therapeutic use of the antagonist; pharmaceutical composition comprising the polypeptide.

## 4. Claims: 1-20 partially

Polypeptide comprising sequence SEQ ID NO:4 and variants thereof; polynucleotide encoding the same and variants thereof; expression vector and host cell comprising the same; use thereof for producing the polypeptide; antibody against the polypeptide; agonist and antagonist for the polypeptide and therapeutic use of the antagonist; pharmaceutical composition comprising the polypeptide.

## 5. Claims: 1-20 partially

Polypeptide comprising sequence SEQ ID NO:5 and variants thereof; polynucleotide encoding the same and variants thereof; expression vector and host cell comprising the same; use thereof for producing the polypeptide; antibody against the polypeptide; agonist and antagonist for the polypeptide and therapeutic use of the antagonist; pharmaceutical composition comprising the polypeptide.



FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

6. Claims: 1-20 partially

Polypeptide comprising sequence SEQ ID NO:6 and variants thereof; polynucleotide encoding the same and variants thereof; expression vector and host cell comprising the same; use thereof for producing the polypeptide; antibody against the polypeptide; agonist and antagonist for the polypeptide and therapeutic use of the antagonist; pharmaceutical composition comprising the polypeptide.

# INTERNATIONAL SEARCH REPORT

### Information on patent family members

Internal. Application No

PCT/US 99/22027

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5646249      A	08-07-1997	NONE	
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